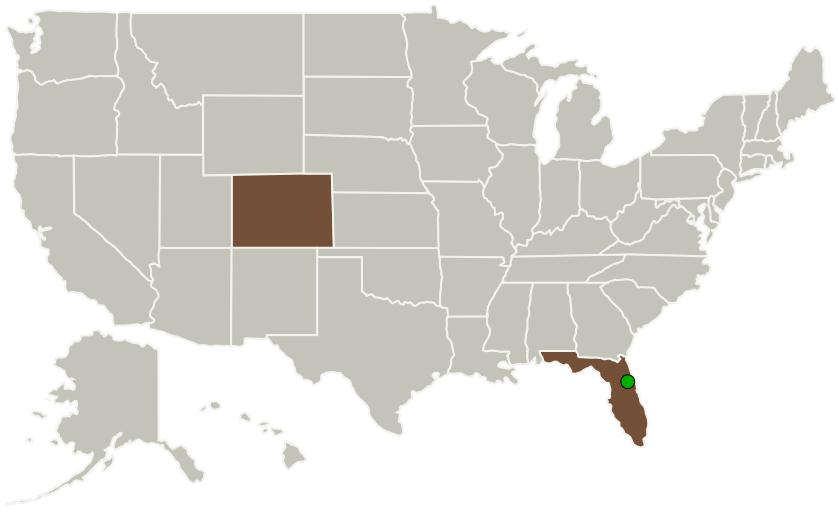
A-DECK, Phase I

Completed Technology Project (2011 - 2011)

Project Introduction

The technical objectives of A-DECK are: 1)Flight Weight including rideshare payloads will be less than 500 Kg. 2)First fundamental frequency of integrated A-DECK System including ESPA or Type C Adapter, payload(s), avionics and release mechanisms will be greater than 50 Hz. 3)After initial qualification, A-DECK must not require additional EELV mission unique design or analysis. 4)A-DECK delivery ICD and Verification products must be sufficient for acceptance of integrated A-DECK as ready to fly meeting launch vehicle, range safety and customer operations requirements. 5)A-DECK mechanical interface to launch vehicle must be through multi-point pinned attachments to the interior of an ESPA or a Type C Adapter. 6)Type C Adapter will utilize standard EELV 62.01" (1575 mm) bolt hole template for both forward and aft interfaces. 7)A-DECK electrical interface to launch vehicle will be through a single shielded multi-line cable to the launch vehicle secondary or designated electrical panel. 8)A-DECK avionics must control, monitor and support all A-DECK mounted spacecraft and/or hosted technical payloads in manner not to interfere with launch vehicle operations or primary spacecraft. 9)A-DECK integration, check out and acceptance will be performed at facilities outside of the Primary Spacecraft integration and check out facility. 10)A-DECK and the A-DECK payloads must remain electrically and mechanically dormant until the launch vehicle transmits its initiate signal to the A-DECK avionics. 11)To the greatest extent possible A-DECK will incorporate existing mechanisms, avionics and components designed to support Small Satellites as an example the Poly Pico-satellite Orbital Deployer (P-POD).

Primary U.S. Work Locations and Key Partners



A-DECK, Phase I

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

HKM Enterprises Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
HKM Enterprises Inc.	Lead Organization	Industry	Denver, Colorado
Kennedy Space Center(KSC)	Supporting Organization	NASA Center	Kennedy Space Center, Florida

Primary U.S. Work Locations	
Colorado	Florida

Project Transitions

February 2011: Project Start

September 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137935)*

Project Management

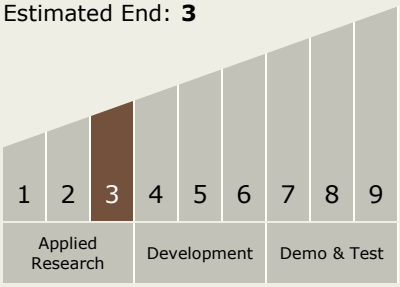
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Phil Smith

Technology Maturity (TRL)

Current: **3**
Estimated End: **3**



Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.1 Cryogenic Systems
    - TX14.1.2 Launch Vehicle Propellant

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System